

National University of Ireland, Galway  
OLLSCOIL NA hÉIREANN, GAILLIMH

~~SUMMER~~ <sup>AUTUMN</sup> EXAMINATIONS 1999

3rd SCIENCE  
GEOLOGY [GE 312]

PAPER THREE

Prof. B.P.J. Williams  
Prof. P.D. Ryan  
Dr. P. Orr  
Dr. M. Williams

Time allowed: Three hours

Answer four questions: **two** from Section A, **two** from Section B.

Illustrate your answers with diagrams where appropriate.

SECTION A

1. Discuss the sedimentary environment of limestone formation.
2. Discuss some uses of the study of sedimentary geochemistry.
3. Briefly outline the principles of sequence stratigraphy.
4. What factors control the nature of a newly-deposited sediment? What changes may occur as this sediment is buried?

## SECTION B

5. Shell concentrations can be classified as event, composite, hiatal and lag concentrations; what are the major distinguishing features of each category?
6. Write an essay on the concept of taphofacies. Include discussion of studies with which you are familiar.
7. "The extent to which organisms such as arthropods and echinoids remain articulated after death is strongly influenced by the interaction of decay and transport" Discuss this statement in the light of experimental studies with which you are familiar.
8. Discuss how trace fossils can be classified in terms of their taxonomy, toponomy and ethology.